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The steel drill string attached to a drilling bit during typical rotary drilling operations used to drill oil and gas wells is used for a second purpose as the casing that is cemented in place during typical oil and gas well completions. Methods of operation are described that provide for the efficient installation of a cemented steel cased well wherein the drill string and the drill bit are cemented into place during one single drilling pass down into the earth. A stabilizer is attached to the drill string that is used to centralize the drill string in the well during cementing operations. A one-way cement valve is installed near the drill bit of the drill string that allows the cement to set up efficiently under ambient hydrostatic conditions while the drill string and drill bit are cemented into place during one single drilling pass into the earth.

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